

PATENT ABSTRACTS OF JAPAN

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(54) SILICA HAVING CONTROLLED POROSITY AND ITS PRODUCTION

(57)Abstract:

PURPOSE: To improve porosity by adding a silicate and acid to a colloidal dispersion of SiO₂ to prepare an SiO₂ suspension, lowering its pH, separating the SiO₂ and drying the same, thereby obtaining a specified specific surface area, oil uptake, pore volume and pore diameter.

CONSTITUTION: After 0 to 50 g electrolyte, such as Na₂SO₄, is mixed with the colloidal dispersion of the SiO₂, 40 to 250 g silicate, such as Na₂SiO₃ (weight ratio of SiO₂/Na₂O is 2 to 4) as Sin, and the acid, such as H₂SO₄, are simultaneously added and mixed at 60 to 95°C to and with this suspension while its pH is maintained at 8 to 10. Next, an inorg. acid, such as HNO₃ or HCl, or CO₂ is blown thereto to lower its pH to 3 to 7, by which the SiO₂ suspension having a concn. of 40 to 80 g/l as SiO₂ is obtd. The settled SiO₂ having a BET specific surface area of 20 to 300 m²/g, a CTAB specific surface area of 10 to 200 m²/g, oil uptake of 80 to 400 cm³/100 g, pore volume of 1 to 10 cm³/g and average pore volume of 10 to 50 nm is obtd. by separation from this suspension by vacuum filtration, etc., then washing with water and acid, followed by drying.